







# Air Cylinder

# Series CG1

ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

## Variations

Series	Action	Rod	Cushion	Basic	Variation					Bore size (mm)	Page
					With One-touch fitting	With rod boot	Air-hydro	Clean series	Copper free		
<b>Standard/Series CG1</b> 	Double acting	Single rod	Rubber	●	●	●	●	●	20 to 100	1.7-2	
		Double rod	Air	●	●	●	●	●			1.7-14
<b>Standard/Series CG1</b> 	Single acting	Single rod (Spring return) (Spring extend)	Rubber	●					20 to 40	1.7-20	
			Air	●							
<b>Non-rotating rod Series CG1K</b> 	Double acting	Single rod	Rubber	●				●	20 to 63	1.7-26	
		Double rod	Air	●							40 to 63
		Double rod	Rubber	●						20 to 63	
<b>Direct mount Series CG1R</b> 	Double acting	Single rod	Rubber	●				●	20 to 63	1.7-35	
			Air	●							
<b>Direct mount/Non-rotating rod Series CG1KR</b> 	Double acting	Single rod	Rubber	●					20 to 63	1.7-40	
<b>Low friction Series CG1□Q</b> 	Double acting	Single rod	No cushion (ø20 to ø63) Rubber (ø80, ø100)	●					20 to 100	1.7-43	

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## Applicable auto switch

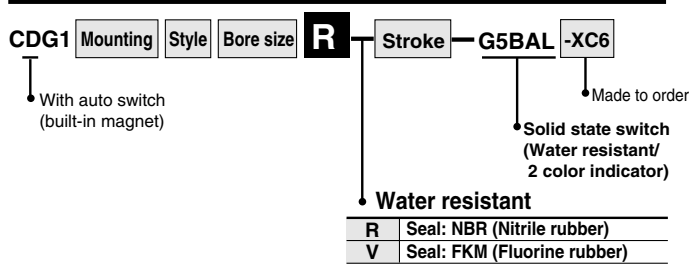
Auto switch model	Band mounting
<b>Reed switch</b>	D-C7/8, D-C73C/C80C D-B5/B6, D-B59W
<b>Solid state switch</b>	D-H7□, D-H7□W, D-H7□F D-H7BAL, D-H7C, D-G5/K5 D-G5□W/K59W, D-G59F, D-G5NTL

## Made to Order

Refer to p.5.4-1 for made to order products of series CG1

# Series CG1

## Water Resistant



Ideal for use in a machine tool environment exposed to coolant mist. Also suited for use in areas in which water splashes, such as food processing equipment or car washers.

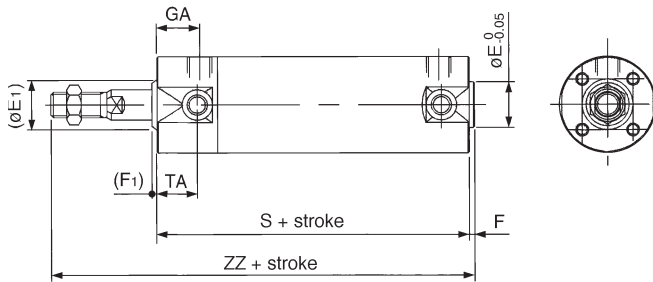
### Specifications

Action	Double acting/Single rod
Bore size (mm)	ø32, ø40, ø50, ø63, ø80, ø100
Cushion	Rubber bumper/Air cushion
Auto switch mounting method	Band mounting
Made to order	Material of the piston rod and rod end nut is stainless steel. (-XC6)

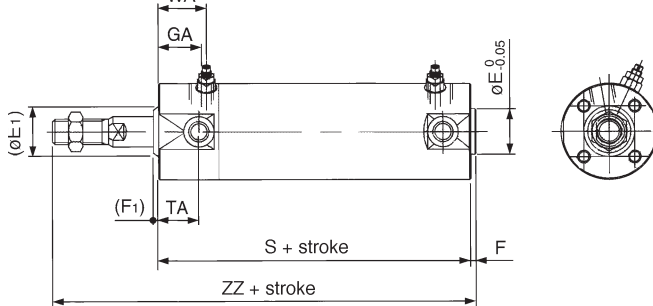
\* Other specifications are the same as the standard model.

### Dimensions

#### Rubber bumper



#### Air cushion



(mm)

Bore (mm)	(E1)	E*	(F1)	F*	GA	S	TA	WA	ZZ
32	17	18	2	2	18	77 (85)	17	20	119 (127)
40	21	25	2	2	19	84 (93)	18	21	136 (145)
50	26	30	2	2	21	97 (109)	20	23	157 (169)
63	26	32	2	2	21	97 (109)	20	23	157 (169)
80	32	40	3	3	28	116 (130)	—	30	190 (204)
100	37	50	3	3	29	117 (131)	—	31	191 (205)

\* These dimensions and other dimensions not indicated here are the same as standard.  
Note) ( ): Long stroke

## ⚠ Precautions

Be sure to read before handling.  
Refer to p.0-39 to 0-46 for Safety Instructions and common precautions.

### Precautions on handling

#### ⚠ Warning

- Do not operate the cushion valve in the fully closed or fully opened state.
  - Using it in the fully closed state will cause the cushion seal to be damaged. Using it in the fully opened state will cause the piston rod assembly or the cover to be damaged.
- Operate within the specified cylinder speed.
  - Failure to do so will damage the cylinder and the seals.

#### ⚠ Caution

- Do not use the air cylinder as an air-hydro cylinder. This will cause an oil leak.
- Install without twisting the bellows.
  - If the cylinder is installed with its bellows twisted, it could damage the bellows.

### Disassembly/Replacement

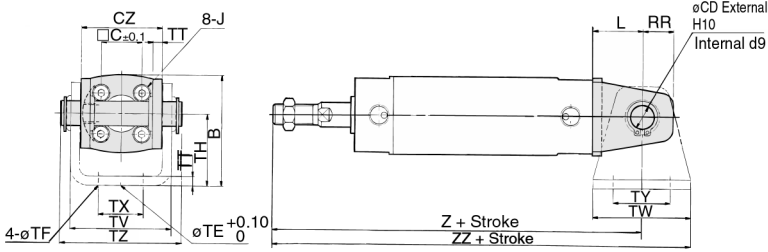
#### ⚠ Caution

- Do not replace the bushings or the cushion seals.
  - The bushings and the cushion seals are press-fit. To replace them, they must be replaced together with the cover assembly.
- To replace a seal, apply grease to the new seal before installing it.
  - If the cylinder is put into operation without applying grease to the seal, it could cause the seal to wear significantly, leading to premature air leakage.
- Do not replace One-touch fittings.
  - Because pipe fittings are press-fit, they must be replaced together with the cover assembly.
- Those with a bore of ø50 or more cannot be disassembled.
  - When disassembling a cylinder with a bore of ø20 to ø40, use a vise or the like to hold the wrench flats portion of the tube cover or the rod cover on one side, while placing a wrench or an adjustable wrench on the other side to loosen and remove the cover. To replace, tighten it an additional 2... from the installed position. (Those with a bore of ø50 or more cannot be disassembled because they have been tightened with greater torque. If they must be disassembled, contact SMC.)

# Series CG1

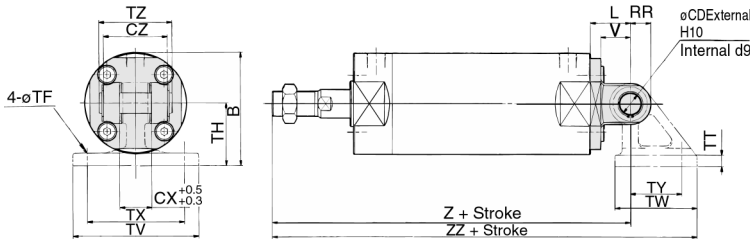
## With Mounting Bracket

### Clevis/CG1DN ø20 to ø63



(The above shows the case port location is changed by 90° degrees.)

### ø80, ø100



\* Clevis pins and snap rings are attached for the clevis style.

### Clevis

Bore (mm)	Stroke range (mm)	B	CD	CX	CZ	L	RR	V	TE	TF	TH
20	Up to 200	38	8	—	29	14	11	—	10	5.5	25
25	Up to 300	45.5	10	—	33	16	13	—	10	5.5	30
32	Up to 300	54	12	—	40	20	15	—	10	6.6	35
40	Up to 500	63.5	14	—	49	22	18	—	10	6.6	40
50	Up to 600	79	16	—	60	25	20	—	20	9	50
63	Up to 600	96	18	—	74	30	22	—	20	11	60
80	Up to 750	99.5	18	28	56	35	18	26	—	11	55
100	Up to 750	120	22	32	64	43	22	32	—	13.5	65

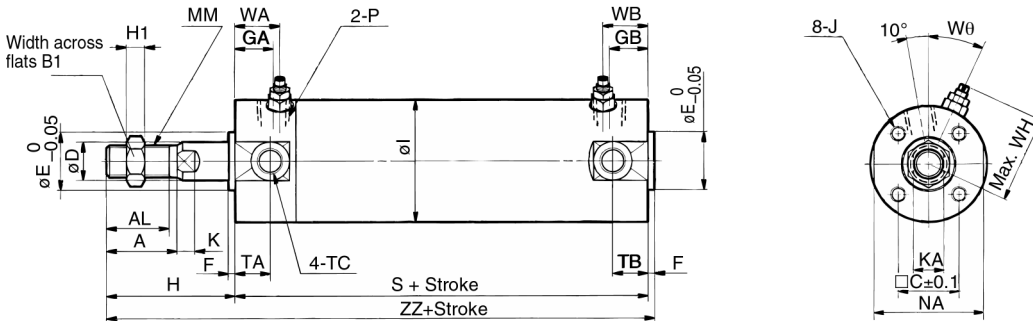
  

Bore (mm)	TT	TV	TW	TX	TY	TZ	Z	ZZ	With rod boot		Applicable pin part no.
									Z	ZZ	
20	3.2	35.8	42	16	28	43.4	118	139	138+ℓ	159+ℓ	CD-G02
25	3.2	39.8	42	20	28	48	125	146	147+ℓ	168+ℓ	CD-G25
32	4.5	49.4	48	22	28	59.4	131	155	153+ℓ	177+ℓ	CD-G03
40	4.5	58.4	56	30	30	71.4	150 (159)	178 (187)	170+ℓ (179+ℓ)	198+ℓ (207+ℓ)	CD-G04
50	6	72.4	64	36	36	86	173 (185)	205 (217)	193+ℓ (205+ℓ)	225+ℓ (237+ℓ)	CD-G05
63	8	90.4	74	46	46	105.4	178 (190)	215 (227)	198+ℓ (210+ℓ)	235+ℓ (247+ℓ)	CD-G06
80	11	110	72	85	45	64	214 (228)	272.5 (286.5)	223+ℓ (237+ℓ)	281.5+ℓ (295.5+ℓ)	IY-G08
100	12	130	93	100	60	72	222 (236)	298.5 (312.5)	231+ℓ (245+ℓ)	307.5+ℓ (321.5+ℓ)	IY-G10

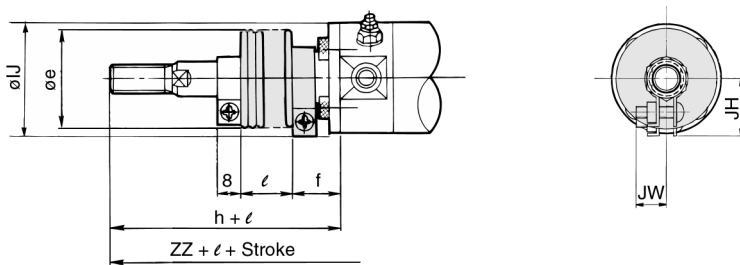
Note 1) ( ): Long stroke

Note 2) Refer to p.1.7-11 for pivot bracket.

## Basic/With Air Cushion: CG1BA



### With rod boot



### With rod boot

Bore (mm)	e	f	h	IJ	JH	JW	ℓ	ZZ
20	30	16	55	27 (14.5)	(11.5)	—	—	126 (134)
25	30	17	62	32 (17.5)	(11.5)	—	—	133 (141)
32	35	17	62	38 (19.5)	(11.5)	—	—	135 (143)
40	35	17	70	48 (22.5)	(13)	—	—	150 (159)
50	40	17	78	59 (25)	(13)	—	—	170 (182)
63	40	18	78	72 (25)	(13)	—	—	170 (182)
80	52	10	80	59	—	—	—	191 (205)
100	62	7	80	71	—	—	—	191 (205)

\* The minimum stroke for rod boot equipped type is 20mm.

Bore (mm)	Standard stroke range (mm)	Long stroke range (mm)	A	AL	B <sub>1</sub>	C	D	E	F	GA	GB	H	H <sub>1</sub>	I	J	K	KA	MM	NA	P	S	TA	TB	TC*	ZZ	WA	WB	WH	Wθ
20	Up to 200	201to350	18	15.5	13	14	8	12	2	12	10 (12)	35	5	26	M4 Depth 7	5	6	M8	24	M5	69 (77)	11	11	M5	106 (114)	16	15 (16)	23	30°
25	Up to 300	301to400	22	19.5	17	16.5	10	14	2	12	10 (12)	40	6	31	M5 Depth 7.5	5.5	8	M10 X 1.25	29	M5	69 (77)	11	11	M6 X 0.75	111 (119)	16	15 (16)	25	30°
32	Up to 300	301to450	22	19.5	17	20	12	18	2	12	10 (12)	40	6	38	M5 Depth 8	5.5	10	M10 X 1.25	35.5	Rc(PT)1/8	71 (79)	11	10 (11)	M8 X 1.0	113 (121)	16	15 (16)	28.5	25°
40	Up to 300	301to800	30	27	19	26	16	25	2	13	10 (13)	50	8	47	M6 Depth 12	6	14	M14 X 1.5	44	Rc(PT)1/8	78 (87)	12	10 (12)	M10 X 1.25	130 (139)	16	15 (16)	33	20°
50	Up to 300	301to1200	35	32	27	32	20	30	2	14	12 (14)	58	11	58	M8 Depth 16	7	18	M18 X 1.5	55	Rc(PT)1/4	90 (102)	13	12 (13)	M12 X 1.25	150 (162)	18	17 (18)	40.5	20°
63	Up to 300	301to1200	35	32	27	38	20	32	2	14	12 (14)	58	11	72	M10 Depth 16	7	18	M18 X 1.5	69	Rc(PT)1/4	90 (102)	13	12 (13)	M14 X 1.5	150 (162)	18	17 (18)	47.5	20°
80	Up to 300	301to1400	40	37	32	50	25	40	3	20	16 (20)	71	13	89	M10 Depth 22	10	22	M22 X 1.5	80	Rc(PT)3/8	108 (122)	—	—	—	182 (196)	22	22	60.5	20°
100	Up to 300	301to1500	40	37	41	60	30	50	3	20	16 (20)	71	16	110	M12 Depth 22	10	26	M26 X 1.5	100	Rc(PT)1/2	108 (122)	—	—	—	182 (196)	22	22	71	20°



Note 1) ( ): Long stroke

Note 2) Trunnion mounting taps with width across flats NA are not attached for bore size ø80 and ø100.

Note 3) Refer to p.1.7-11 for mounting brackets.